



**WORKING PAPER**

**ASSEMBLY — 41ST SESSION**

**EXECUTIVE COMMITTEE**

**Agenda Item 17: Environmental Protection – International Aviation and Climate Change**

**Agenda Item 18: Environmental Protection – Carbon Offsetting and Reduction Scheme for International Aviation (CORSA)**

**IMPLEMENTATION ISSUES REGARDING THE SCENARIOS FOR A LONG-TERM ASPIRATIONAL GOAL FOR INTERNATIONAL AVIATION CO<sub>2</sub> EMISSIONS REDUCTIONS AND THEIR INTERRELATIONSHIP WITH CORSA**

(Presented by the Russian Federation)

**EXECUTIVE SUMMARY**

This paper presents an analysis of the possibility of attaining projected outcomes, presented in the three integrated LTAG implementation scenarios, for a **real** and immediate reduction in CO<sub>2</sub> emissions in the civil aviation sector, and also puts forward a proposal to include additional activities in the LTAG scenarios in order to achieve zero global CO<sub>2</sub> emissions by mid-century.

In addition, this paper presents considerations relating to the need for an evolutionary transition from CORSA implementation to LTAG scenario implementation.

**Action:** Action of the Assembly is presented in Section 4 of this paper.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives <i>Economic Development of Air Transport and Environmental Protection</i>
<i>Financial implications:</i>	This working paper does not have direct financial implications for all ICAO Member States.
<i>References:</i>	<i>Report on the feasibility of a long-term aspirational goal (LTAG) for international civil aviation CO<sub>2</sub> emission reductions<sup>2</sup></i> <i>Doc 10178, Report of the High-level Meeting on the feasibility of a Long-Term Aspirational Goal for international aviation CO<sub>2</sub> emissions reductions (HLM-LTAG)</i>

<sup>1</sup> Russian version provided by the Russian Federation.

<sup>2</sup> <https://www.icao.int/environmental-protection/LTAG/Pages/LTAGreport.aspx>

## 1. INTRODUCTION

1.1 The latest research findings of the United Nations Intergovernmental Panel on Climate Change (IPCC) show that achieving the goal of zero global net CO<sub>2</sub> emissions by 2050 may provide the best chance of preserving the average global temperature increase below 1.5°C and that this goal is attainable only if there is an immediate and substantial decrease in emissions in all sectors.

1.2 There is no doubt that the UN IPCC is calling for **real** and immediate reduction in greenhouse gas emissions in **all** industrial sectors on a global level in order to achieve the goals of the Paris Agreement.<sup>3</sup>

1.3 It is also quite evident that CORSIA implementation activities being carried out by ICAO Member States create barriers to achieving this goal. This stems from the fact that the CORSIA system is in essence a mechanism for channelling investments back into environmental projects in other industrial sectors through the purchase of emission credits on open carbon markets, with respect to which the ICAO Assembly has repeatedly expressed its deep concern.<sup>4</sup>

1.4 The outflow of funds from the industry inhibits modernization and, consequently, increases the volume of emissions in the international aviation sector. Therefore, the issue arises of the compatibility of the CORSIA system with the efforts of the international community to reduce greenhouse gas emissions, as well as with activities envisioned in the integrated scenarios for a long-term aspirational goal for international aviation CO<sub>2</sub> emissions reductions.

## 2. WHY DO ALL THREE INTEGRATED LTAG SCENARIOS NOT SEEM REALISTIC?

2.1 All three scenarios assign the main role in reducing CO<sub>2</sub> emissions to sustainable aviation fuel (SAF). Undoubtedly, these types of fuel have the potential to reduce CO<sub>2</sub> emissions. However, there is currently considerable uncertainty about the possibility of ramping up SAF production with a drop in SAF prices to an acceptable level, and also about the significance of the contribution of these fuel types to a real reduction in CO<sub>2</sub> emissions, considering life-cycle CO<sub>2</sub> emissions associated with their production. Furthermore, substantial increases in food and water security risks must be taken into consideration. At the same time, it is evident that, in the near term, investments in fleet renewal and technical modernization of civil aviation sector infrastructure will provide significantly greater effectiveness in reducing global CO<sub>2</sub> emissions and increasing global flight safety.

2.2 In light of the above, it is appropriate to recommend that ICAO continue studying the potential contribution of SAFs to achieving the projected CO<sub>2</sub> emissions reduction levels based not on the hypothetical assumption that SAF and lower carbon aviation fuels (LCAF) could completely replace conventional aviation fuels by 2040, but based on a **realistic** assessment of the potential for increasing production volumes.

2.3 Nonetheless, when conducting the above-mentioned studies, not only should life-cycle CO<sub>2</sub> emissions of SAF and LCAF be taken into account, the results should also be accompanied by a comparative analysis of the cost-effectiveness of investments in fleet renewal as compared to investments in the

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<sup>3</sup> [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

<sup>4</sup> “...*Reaffirming* the concern with the use of international civil aviation as a potential source for the mobilization of revenue for climate finance to the other sectors, and that MBMs should ensure the fair treatment of the international aviation sector in relation to other sectors...” (15<sup>th</sup> paragraph of the preamble to Resolution A40-19: *Consolidated statement of continuing ICAO policies and practices related to environmental protection — Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*)

production and procurement of SAF and LCAF in the context of the industry's sustainable development goals, particularly in developing countries. The results should also be accompanied by the comparative value of the global decrease in CO<sub>2</sub> emissions in the international civil aviation sector with food and water security risks factored in.

2.4 Despite the quite modest role assigned to hydrogen fuel in the last scenario, its prospects in aviation merit greater attention. However, as is the case with SAF, there is still considerable uncertainty about the safety of using hydrogen fuel due to its extremely high explosivity. At the same time, provision must be made for expenditure on development, certification and construction of new types of electric aircraft powered by hydrogen fuel cells, including the creation of global industry infrastructure for safe transportation of hydrogen fuel and safe hydrogen fuelling.

2.5 International air transport's post-COVID-19 pandemic recovery has strongly pronounced regional specificities. In developed countries, the volume of air transport services has already reached pre-pandemic levels, while in the overwhelming majority of developing countries, aviation operations have been extremely slow to recover, primarily because of a lack of financial resources. Furthermore, all three scenarios with a timeline through 2050 presume significant investments in the industry, ranging from USD 274.4 billion to USD 1 563.2 billion. In a large number of cases, the additional financial burden will be devastating for the civil aviation sector of the developing countries in the near term. Thus, it is quite appropriate to propose that the developed countries take the lead in the global funding of activities envisioned in the proposed integrated LTAG scenarios.

2.6 It is important to note that not one of the integrated LTAG scenarios ensures absolute zero global CO<sub>2</sub> emissions by 2050. At the High-level Meeting on the Feasibility of a Long-term Aspirational Goal for International Aviation CO<sub>2</sub> Emissions Reductions (HLM-LTAG), held 19–22 July 2022, an attempt was made in this respect to include in the final report proposals that the existing residual emissions gap be covered through measures applied beyond the sector, such as CORSIA, by taking on even more ambitious obligations.

2.7 It is quite evident that this ambition level will lead to the global collapse of the industry, while zero CO<sub>2</sub> emissions will be achieved solely at the cost of cessation of international air transport. Therefore, the world aviation community must make a decision either to consolidate efforts to achieve the LTAG goals of **real** emissions reduction in the sector based on its technological modernization, or to continue to implement the CORSIA system, leading to the outflow of capital from the industry and the global rise in volumes of CO<sub>2</sub> emissions in the international civil aviation sector.

### 3. **CAN INTERNATIONAL AVIATION ACHIEVE THE GOAL OF ZERO GLOBAL CO<sub>2</sub> EMISSIONS BY THE MIDDLE OF THIS CENTURY?**

3.1 The issues raised in Section 2 of this paper clearly illustrate the need for further LTAG studies so as to develop more objective scenarios for a **real** reduction in volumes of CO<sub>2</sub> emissions in the sector and to identify potential sources of funding on a global scale for projected activities.

3.2 At the same time, it is essential to study additional elements enabling the attainment of more ambitious goals for inclusion in the LTAG implementation activities. For instance, the annual volume of global greenhouse gas emissions from naturally occurring fires is known to be comparable to the total CO<sub>2</sub> emissions in the civil aviation sector of all ICAO Member States. To this must be added the reduction in the absorption capability of forestland and the megawatts of radiated thermal energy, which is contributing to the increasing number of natural disasters – droughts and floods – causing considerable tangible damages and social impacts, as well as harming wildlife.

3.3 The proposal to create international aviation forces (or an international distributed aviation service) to combat naturally occurring fires and other natural disasters under the aegis of the United Nations has already been submitted to the ICAO Assembly for consideration on more than one occasion. However, to date, this proposal has not been duly considered in ICAO fora. Incorporating this element in the LTAG scenarios will make it possible to achieve zero CO<sub>2</sub> emissions by mid-century or at least to approach that level. It will also provide real support for achieving the United Nations Sustainable Development Goals before 2030 on a global scale.

#### 4. ACTION BY THE ICAO ASSEMBLY

4.1 The Assembly is invited to:

- a) *instruct* the ICAO Council to continue studying the feasibility of an LTAG in order to develop more objective scenarios for **real** reduction of volumes of CO<sub>2</sub> emissions in the international civil aviation sector and identify potential sources of funding for projected activities on a global level;
- b) *instruct* the ICAO Council to study the possibility of including activities in the LTAG scenarios to establish an international distributed aviation service to combat naturally occurring fires and other natural disasters under the aegis of the United Nations; and
- c) *agree* with the need for an evolutionary transition from CORSIA implementation to implementing activities envisioned in an agreed-upon LTAG scenario in order to achieve a **real** reduction in CO<sub>2</sub> emissions in the international civil aviation sector. Also, *call upon* the ICAO Member States to opt out of using regional market-based measures, which are based on trading CO<sub>2</sub> emission quotas, for international civil aviation.<sup>5</sup>

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<sup>5</sup> European Union ETS, United Kingdom ETS and others.